IDAHO
DEPARTMENT OF FISH AND GAME

Jerry M. Conley, Director

MCCALL FISH HATCHERY

Annual Report

1 October 1983 - 30 September 1984

by
David Parrish
Fish Hatchery Superintendent I

June 1985

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McCALL FISH HATCHERY

Annual Report

ABSTRACT

McCall Hatchery produced 1,036,800 cutthroat trout fry (895,176 Henrys Lake cutthroat and 141,624 Westslope cutthroat fry) for a total weight of 2,935.7 pounds during 1984. We fed 2,878 pounds of fish feed for a conversion rate of 0.98 pounds of feed fed to produce one pound of fish.

An additional 153,304 rainbow trout fry were produced weighing 404.8 pounds. They received 267 pounds of feed for a conversion rate of 0.66 pounds of feed per pound of fish produced.

McCall Hatchery personnel stocked 154 mountain lakes with 111,644 Westslope cutthroat and 48,203 rainbow trout fry in Regions 2 and 3. An additional 13 lakes and reservoirs along with 26 streams were planted with 114,091 catchable-size rainbow (38,530 pounds) which were redistributed from Nampa, Grace and American Falls hatcheries.

The only disease problem encountered this year was once again nutritional gill disease which affected only our Westslope cutthroat. Processed beef liver was used to treat the problem and limited improvements were noticed.

Spawntaking operations at Fish Lake resulted in the trapping of 757 adult Westslope cutthroat, which produced 271,906 eggs from 400 females spawned (680 eggs per female).

Author:

David Parrish
Fish Hatchery Superintendent **I**

OBJECTIVES

The state funded objectives of McCall Hatchery are:

1. To redistribute approximately 35,000 pounds of catchable-size rainbow trout reared at other state hatcheries into 26 streams and 13 lakes and reservoirs in Regions 2 and 3.

2. To hatch and rear approximately 1,000,000 trout fry for stocking in state waters and for redistribution to other hatcheries.

3. To stock approximately 600 high mountain lakes in Regions 2 and 3 on a three-year rotation basis.

4. To operate and maintain a fish trap at Fish Lake for the purpose of obtaining Westslope cutthroat eggs.

INTRODUCTION

McCall Hatchery was constructed in 1979 by the Army Corps of Engineers as part of the Lower Snake River Compensation Plan, which was authorized by Congress to compensate for losses caused by the lower Snake River dams (Ice Harbor, Lower Monumental, Little Goose and Lower Granite). The principle purpose of this hatchery is to produce summer chinook salmon, but McCall Hatchery is also used to redistribute catchable-size rainbow trout and to hatch and rear various trout species for stocking state waters and for supplying fry to other state hatcheries. Funding is provided by the Idaho Department of Fish and Game (IDFG) for all trout programs for the period 1 April - 30 September. Funds are also provided for a Hatchery Superintendent I stationed at McCall Hatchery to supervise these programs. This report covers all programs funded by the Idaho Department of Fish and Game.

McCall Hatchery is located along the North Fork of the Payette River approximately 1/4 mile below Payette Lake in the city of McCall, Idaho (Fig. 1). Hatchery water is obtained from Payette Lake via a 36-inch diameter underground pipeline. Water inlets at the surface and at a depth of 50 feet provide the capability of obtaining the best water temperature available (Fig. 2). The hatchery requires 20 cubic feet per second of water for normal operations.

Fish rearing and holding facilities at McCall Hatchery include: 26 eight-tray stacks of Heath incubators, 14 indoor concrete vats (4' x 40'), two outdoor concrete rearing ponds (42' x 200'), two fiberglass Heath troughs (1.75' x 15.5') and one outdoor collection basin (15' x 110'). Trout eggs are hatched in the incubators and transferred to the vats in the "button-up" stage. Rainbow catchables are held in the collection basin prior to redistribution. No trout are reared in the outside rearing ponds as these are used exclusively for the salmon.

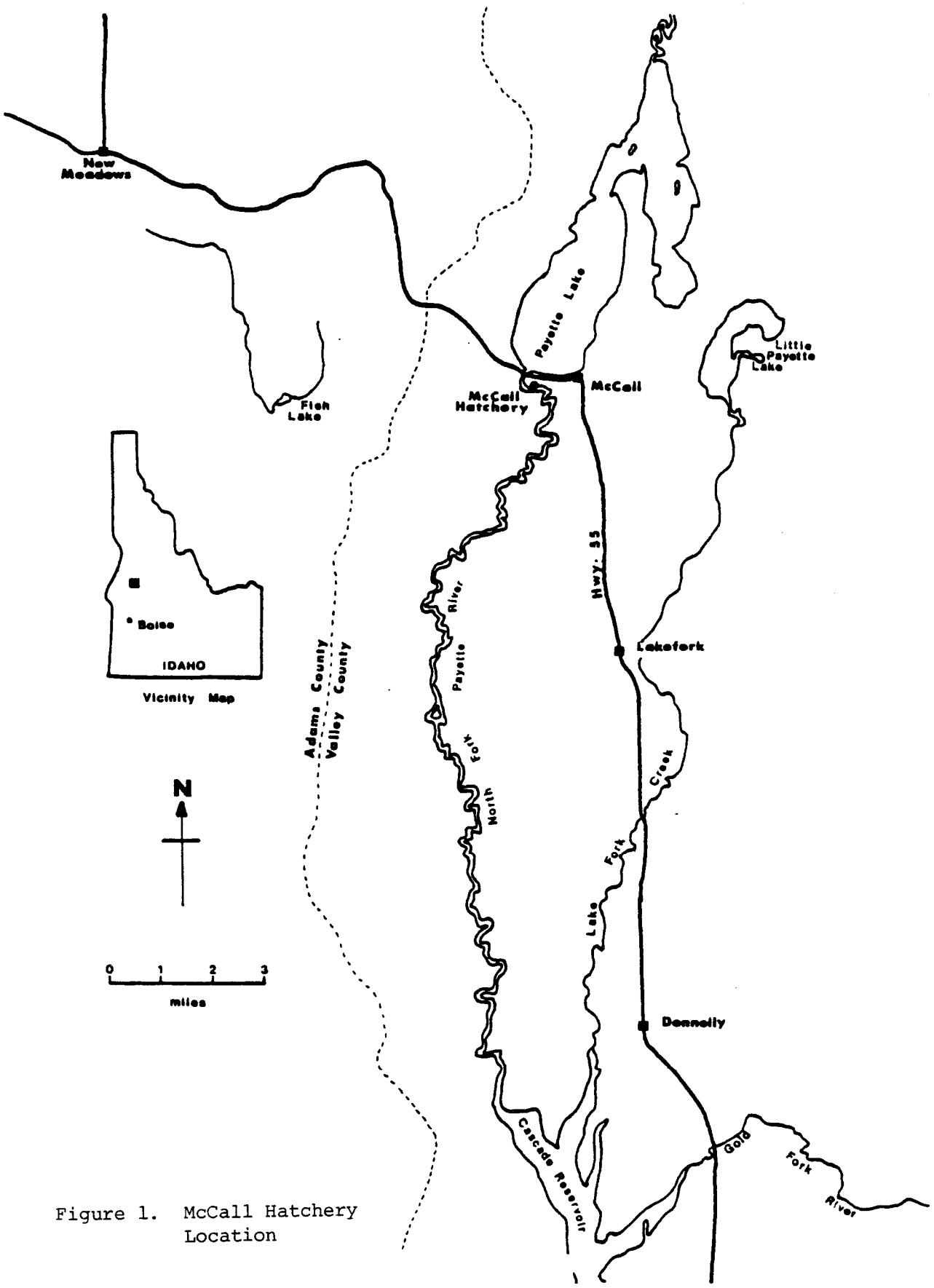


Figure 1. McCall Hatchery Location

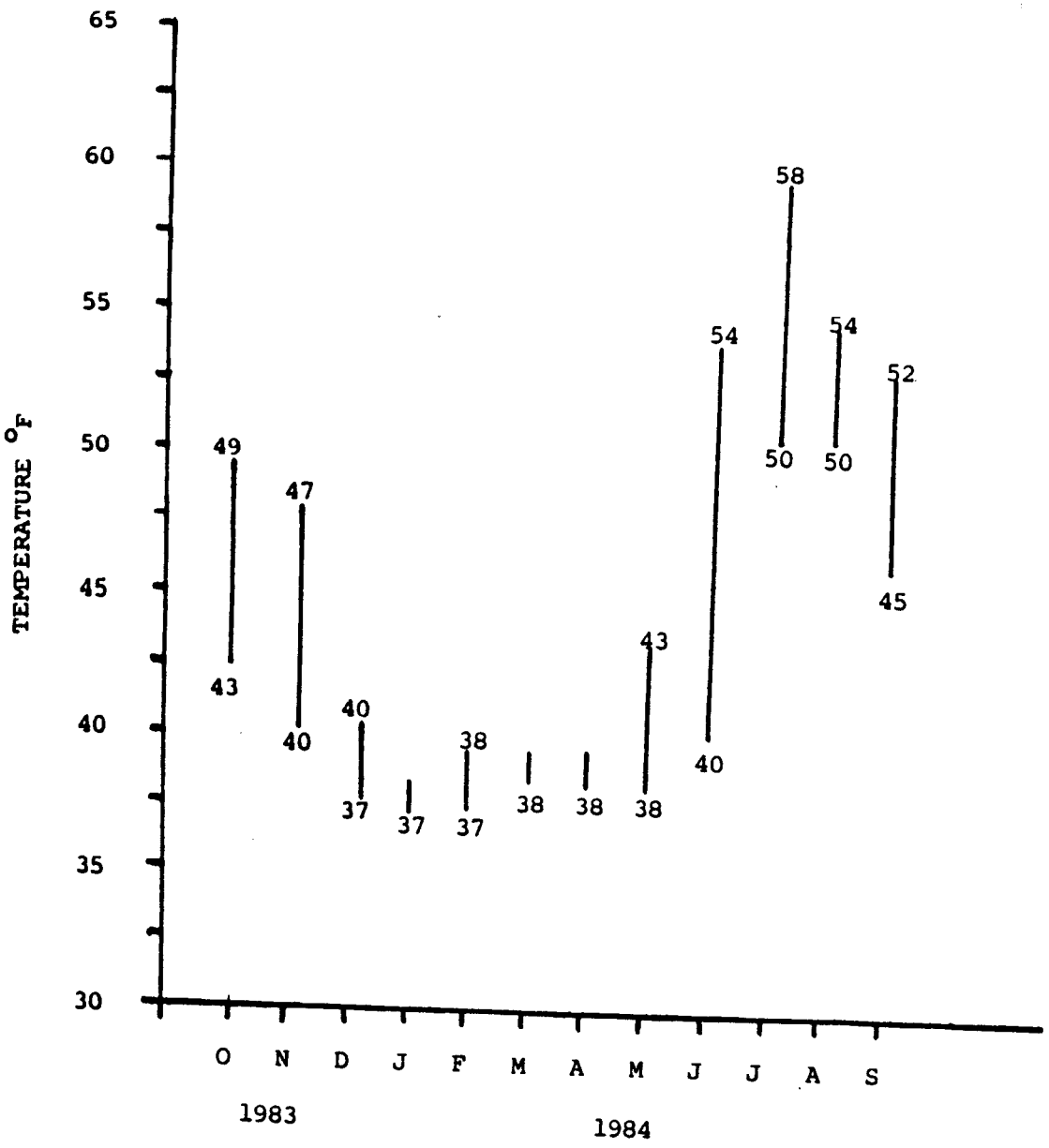


Figure 2. Monthly temperature ranges of McCall Hatchery water.

FISH PRODUCTION

McCall Hatchery personnel reared three different species of trout with widely varying survival rates ranging from 52.1% in the Westslope cutthroat fry to 88.8% in the Henrys Lake cutthroat (Table 1). Production was higher this year due to McCall Hatchery picking up some of the production of Mackay Hatchery, which was being rebuilt. We produced 895,176 Henrys Lake cutthroat fry (2,822 pounds), 141,624 Westslope cutthroat fry (113.7 pounds) and 153,304 rainbow fry (404.8 pounds). No trout were on hand at the beginning of the fish year and all fish were planted or transferred by 1 October 1984.

The rainbow trout eggs were obtained 1 May from Trout Lodge as eyed eggs. Eyed Henrys Lake cutthroat eggs were received 8 May, and the Westslope eggs were taken from our own broodstock at Fish Lake from 1 May - 24 May (Table 2).

FISH HEALTH

Once again in 1984, we experienced an outbreak of nutritional gill disease as diagnosed by Charlie Smith (U.S. Fish and Wildlife Service, Bozeman, Montana). Only the Westslope cutthroat seemed to be affected by this disease. Once the diagnosis was made, the fish were fed a processed beef liver (Bioproducts, Inc.) for a period of 10 days at which time the mortality decreased to near normal levels. Over 50% of the mortality was due to this outbreak, thus becoming the major reason for a survival rate of only 52.1%.

The Westslope cutthroat broodstock at Fish Lake were tested for virus by Harold Ramsey, Fish Pathologist IDFG, with the International Aquaculture Research Center, Hagerman, Idaho, doing the culture work. Tissue samples and ovarian fluid were taken from 41 fish. All samples being negative for both IPN and IHN virus.

FISH TRANSFERS AND STOCKING

Transfers

We transferred trout fry to two different hatcheries this year (Table 3). A total of 25,173 Westslope cutthroat (55 pounds) were shipped on 13 September to Clark Fork Hatchery for use in north Idaho programs. This is down from the 150,000 Westslope cutthroat fry they received in 1983, due to more of the Westslope cutthroat being used for mountain lake planting.

An additional 105,101 rainbow trout fry (372.7 pounds) were transferred to Mackay Hatchery on 31 August.

Table 1. Trout production at McCall Hatchery

Species	Eggs	Percent Eyed	Fish Produced	Percent Survival	Pounds Produced
Cutthroat 1/	271,906	91.6	141,624	52.1	113.7
Cutthroat 2	1,008,423	-	895,176	88.8	2,822.0
Rainbow	223,938	-	153,304	68.5	404.8
TOTALS	1,504,267	91.6	1,190,104	79.1	3,340.5

1/ Westslope Cutthroat

2/ Henry's Lake Cutthroat

Table 2. Sources of trout eggs received at McCall Hatchery

Species	Date Received	Egg Stage	Source
Henry's Lake Cutthroat	5/8	Eyed	Henry's Lake Hatchery
Westslope Cutthroat	5/1-5/24	Green	Fish Lake
Rainbow Trout	5/1	Eyed	Trout Lodge Hatchery

Table 3. Transfers of trout from McCall Hatchery.

Date	Species	Number Per Pound	Number Transferred	Receiving Station	Pounds Transferred
8/31	Rainbow Trout	282.0	105,101	Mackay	372.7
9/13	Westslope Cutthroat	457.7	25,173	Clark Fork	55.0
Totals			130,274		427.7

Catchables

McCall Hatchery is a redistribution station for stocking catchable-size rainbow trout in Regions 2 and 3, involving Adams, Idaho, Valley and Washington counties (Fig. 3). Catchables were received from Nampa, Grace and American Falls hatcheries from April through August. Stocking began in mid-May and was concluded in late August.

This year, McCall Hatchery stocked 13 lakes and reservoirs along with 26 rivers and streams with a total of 114,091 catchable-size rainbow trout averaging 2.9 fish per pound, for a total of 38,530 pounds of fish planted. These numbers are almost identical to the 1983 year totals.

Fry

Lowland Lakes

Due to the reconstruction of Mackay Hatchery, McCall Hatchery absorbed the production of Henrys Lake cutthroat fry for replanting Henrys Lake. We produced 798,372 fry that were stocked in Henrys Lake in mid-September and an additional 25,920 Henrys Lake cutthroat fry for Sublett Reservoir in Region 4 (Table 4). The remaining 70,884 Henrys Lake cutthroat fry were planted in Goose Lake in Region 3. Due to the outbreak of nutritional gill disease, only 4,807 Westslope cutthroat fry were planted back into Fish Lake to provide future broodstock for our egg-taking operation.

Mountain Lakes

McCall Hatchery stocks approximately 600 mountain lakes with trout fry in Regions 2 and 3 on a three-year rotation basis. Lakes in the Snake, Boise, Salmon and Clearwater River drainages make up our stocking area (Fig. 3). Most lakes are stocked by means of fixed-wing aircraft (Cessna 185) equipped with a fish-release hopper to facilitate release of the fry. Planting began earlier than normal this year, due to an early ice-out on the lakes and a stable air mass which brought an extended period of fair weather. Planting began on 18 July and was completed on 9 August. During this period, McCall Hatchery stocked a total of 159,847 trout fry (70.3 pounds) into 154 mountain lakes. A total of 10 flights were made which required 24 hours and 26 minutes of flight time and cost $3,618.75. The average cost per lake planted was $23.50. This compares to a cost of $34.17 in 1983 and $23.21 in 1982.

SPAWNTAKING OPERATIONS

McCall Hatchery operates and maintains a trapping and holding facility at Fish Lake for spawning Westslope cutthroat trout. This facility consists of a velocity barrier, fish ladder and trap, two holding ponds and a spawning platform. Fish Lake is located approximately six miles west of McCall Hatchery and is owned by

Table 4. Lowland waters stocked with trout fry by McCall Hatchery.

Date	Species	Water Stocked	Number Stocked	Pounds Stocked
9/5	Henry's Lake Cutthroat	Sublett Res.	25,920	80.0
9/11	Henry's Lake Cutthroat	Henry's Lake	478,101	1,230.0
9/17	Henry's Lake Cutthroat	Henry's Lake	320,271	1,238.0
9/17	Henry's Lake Cutthroat	Goose Lake	70,884	274.0
9/28	Westslope Cutthroat	Fish Lake	4,807	20.5
Totals			899,983	2,842.5

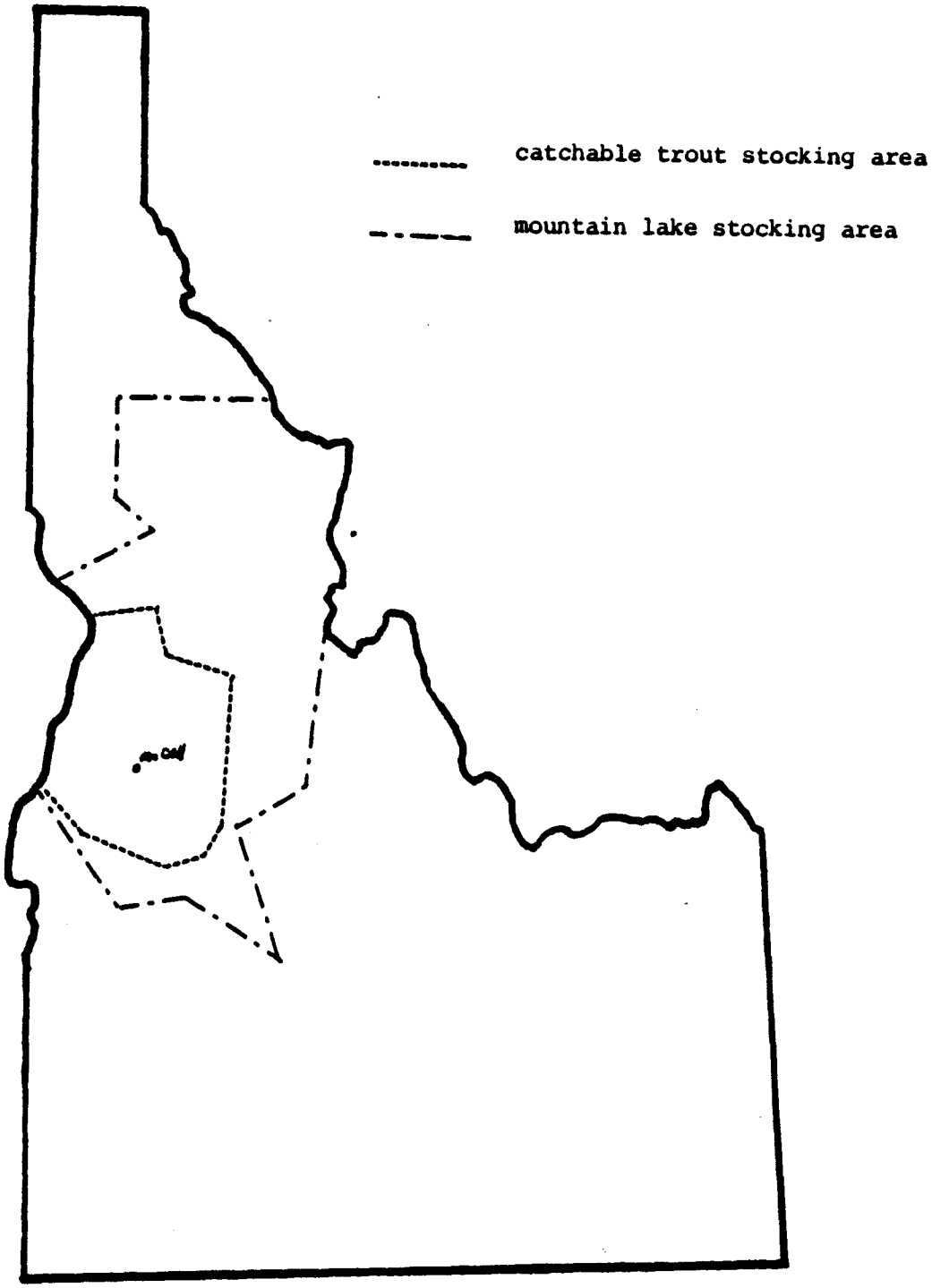


Figure 3. Catchable trout and mountain lake stocking area covered by McCall Hatchery.

IDFG. The trapping and holding facility, located on Fish Creek, is on land owned by Boise Cascade Corporation.

The trap was installed on 22 April and trapping was terminated on 24 May. A total of 757 Westslope cutthroat adults were trapped, of which 449 were females and 308 were males (Fig. 4). The sex ratio of adults was 1.45 females per male, up slightly from the 1.39 females per male in 1983 and 1.36 females per male in 1982. As in previous years, there was quite a range in size. Females ranged from 10.0 inches to 19.0 inches, with a mean total length of 14.1 inches (Fig. 5). Males ranged from 8.0 inches to 17.25 inches and had a mean total length of 11.75 inches (Fig. 6).

In 1982, all cutthroat which entered the trap were jaw tagged with numbered Monel tags. Of the fish trapped in 1984, 53 fish were tagged representing 7% of the total run. Length data obtained from tagged fish indicated an average length increase for two years of 1.02 inches, with females showing an average increase of 0.94 inches and males an overall average increase of 1.38 inches. Fish that were in the 11-12 inch range in 1982 averaged the greatest length increase (2.25 inches for two years), and fish in the 14-15 inch group showed the least length increase (0.35 inches for two years).

Spawning operations began on 30 April and concluded on 24 May. During this period, 400 females were spawned producing 271,906 eggs, an average of 680 eggs per female. An additional 49 "green" females were released upstream for natural spawning.

FISH FEED UTILIZED

A total of 3,150 pounds of Rangen's fish feed was fed to our trout fry at a cost of $851.35 (Table 5), up considerably from the 500 pounds of feed required in 1983 ($123.59). Once again, the increase is due to the additional 800,000 Henrys Lake cutthroat produced this year. An overall conversion rate of 0.94 pounds of feed fed to produce one pound of fish was attained, while the total cost to produce one pound of fish was $7.58 (excluding capital outlay).

An additional 500 pounds of Rangen's feed ($101.16) was fed to our catchable-size rainbow trout, but due to the fact these fish were being held such short periods of time (1-2 weeks), no conversion rate or weight gain was computed.

ACKNOWLEDGEMENTS

McCall Hatchery staff included: Bill Hutchinson, Fish Hatchery Superintendent II; David Parrish, Fish Hatchery Superintendent I; Jerry McGehee, Fish Culturist; Patrick Chapman, temporary Fish Hatchery Superintendent I; June Morse, Christie Cockerham and John Gebhards, Biological Aides.

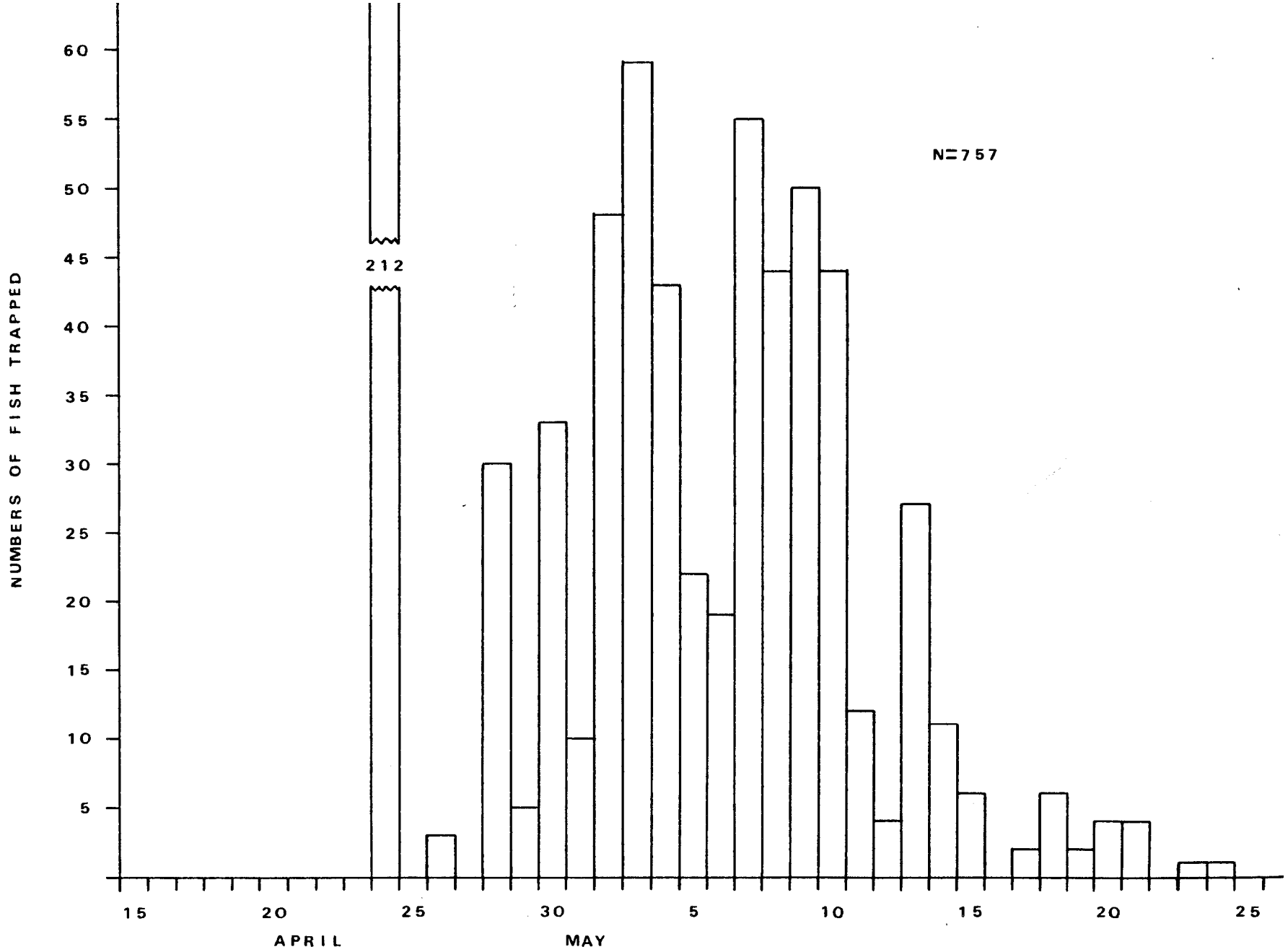


Figure 4. Numbers of Westslope cutthroat trout trapped at Fish Lake.

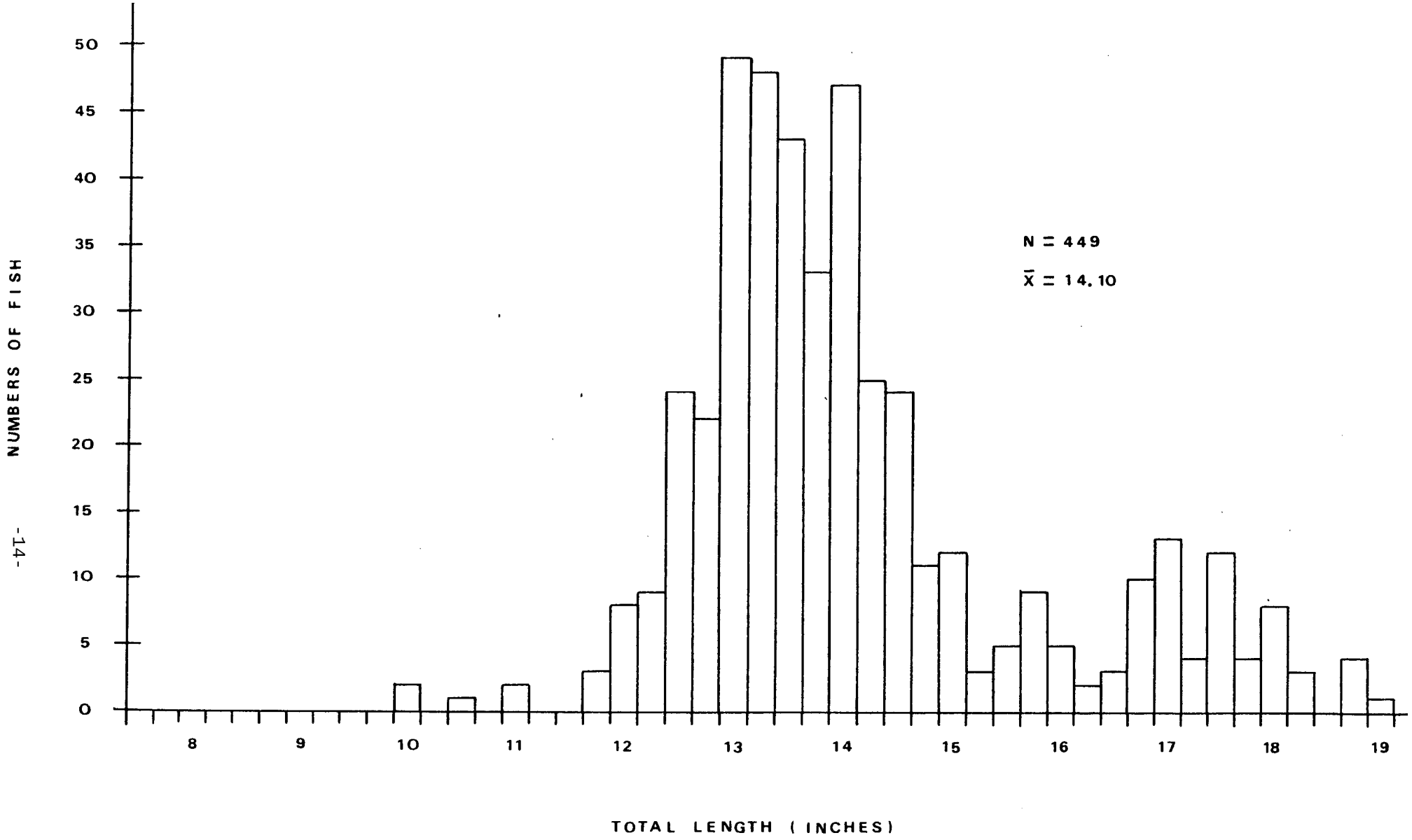


Figure 5. Total lengths of female Westslope cutthroat trapped at Fish Lake.

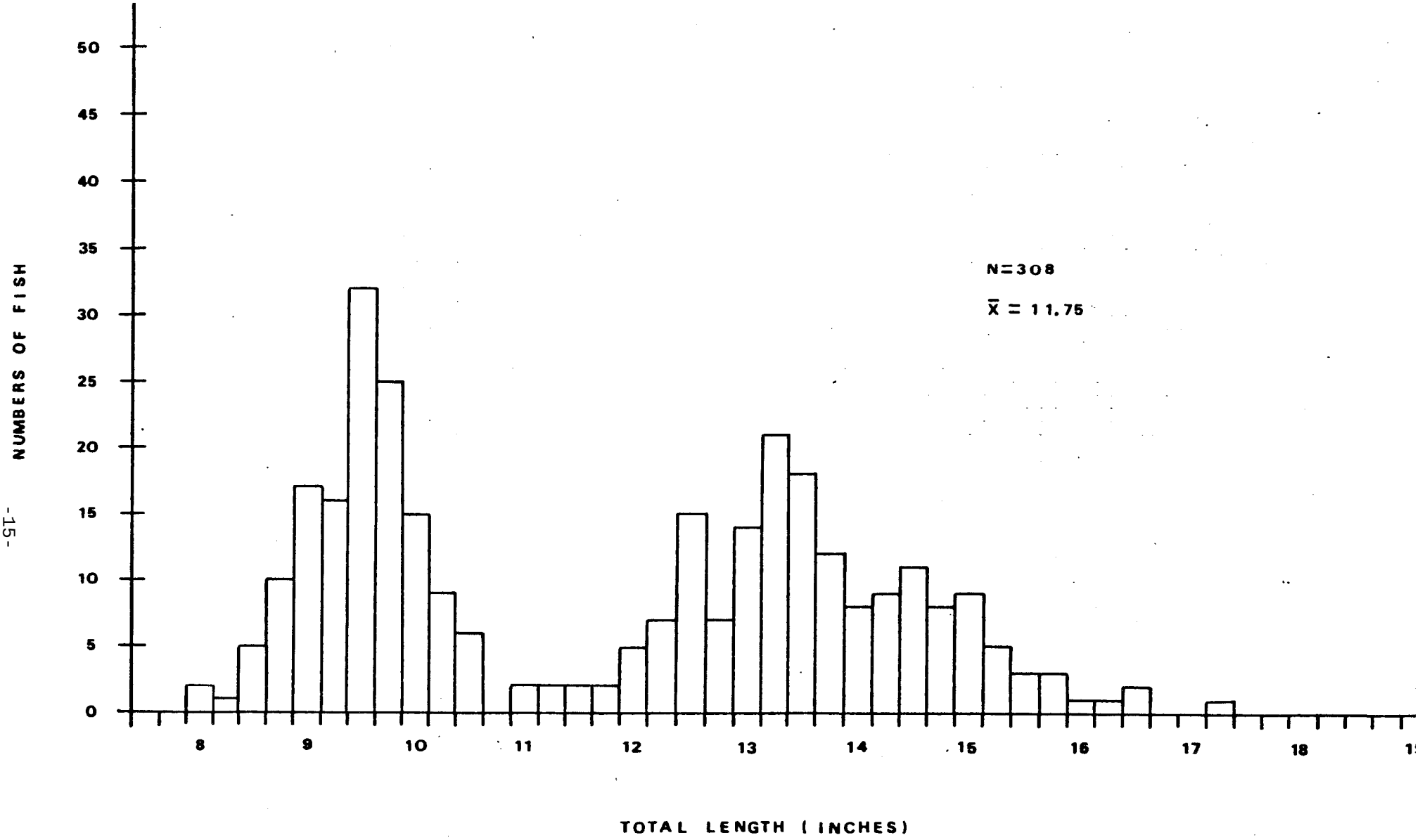


Figure 6. Total lengths of male Westslope cutthroat trout trapped at Fish Lake.

Table 5. Fish feed fed to trout fry at McCall Hatchery, 1984.

Brand	Feed Size	Pounds Fed	Cost
Rangen's	Starter	500	$144.50
Rangen's	#1	650	$187.85
Rangen's	#2	1,000	$289.00
Rangen's	#4	1,000	$230.00
Totals		3,150	$851.35

Thanks are also due to Fred Edwards and Eldon Anglen, Conservation Officers, for their help in planting rainbow catchables.

Special thanks go to Jerry Lockhart, District Conservation Officer, for his long hours and help with the Fish Lake spawning operation and for help with rainbow catchable planting.

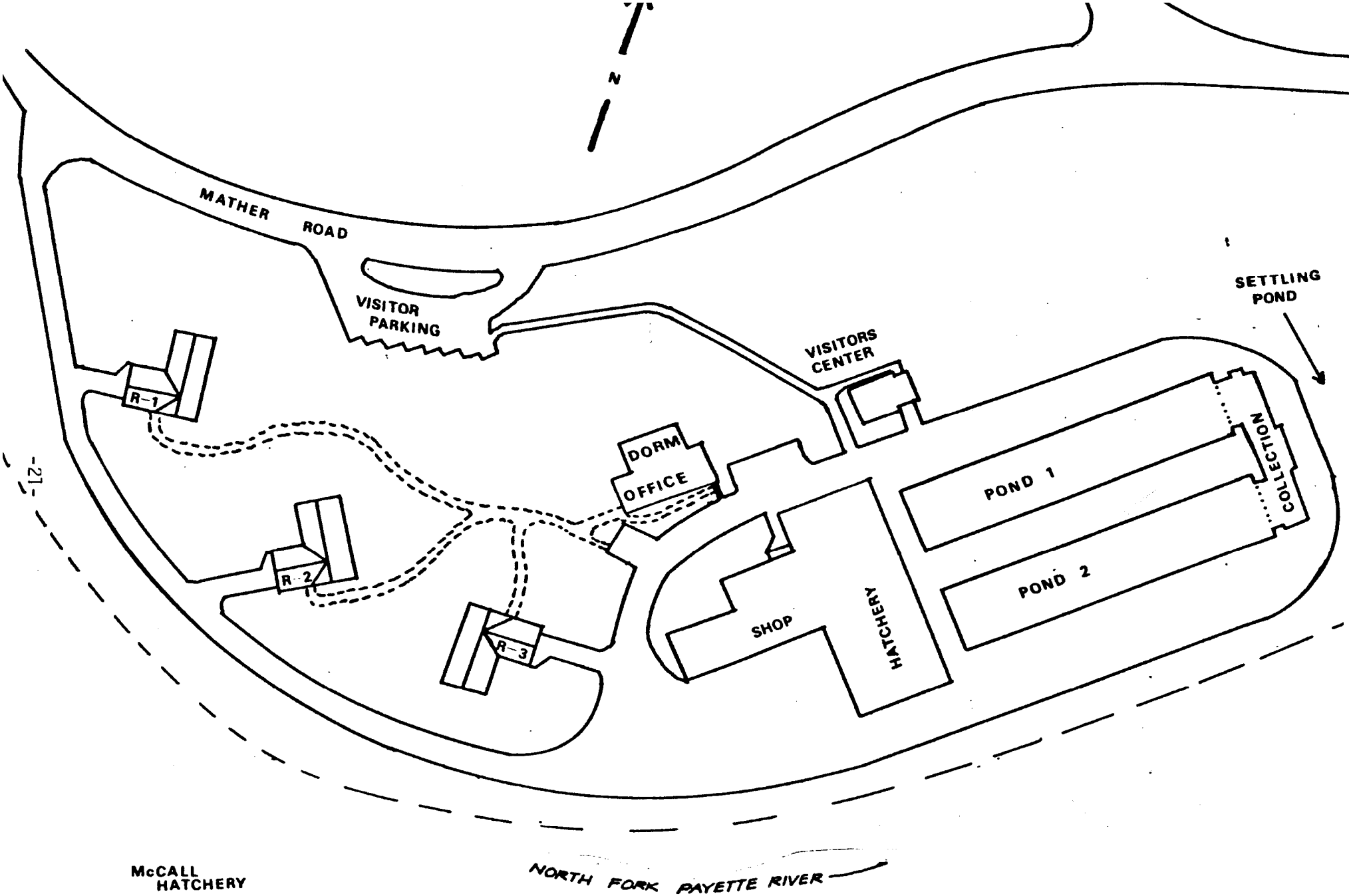
APPENDIX

Appendix A. Waters stocked with catchable rainbow trout by McCall Hatchery

Water	Catalog Number
Big Creek	09-14-09-0000
Boulder Creek	07-12-10-0000
Clear Creek	09-14-08-0000
Crooked River	05;14-09-0000
East Fork Lost Valley Creek	08-26-02-0003
East Fork South Fork Salmon River	07-24-13-0000
Gold Fork River	09-14-14-0000
Goose Creek	07-12-13-0000
Hornet Creek	08-22-00-0000
Johnson Creek	07-24-13-0008
Kennally Creek	09-14-14-0001
Lake Creek	09-14-17-0019
Lake Fork Creek	09-14-17-0000
Lick Creek	05-14-12-0000
Little Salmon River	07-12-00-0000
Middle Fork Weiser River	08-19-00-0000
North Fork Lake Fork Creek	09-14-17-0005
North Fork Payette River	09-14-00 0005,0006,0007
Rapid Creek	09-14-14-0002
Secesh River	07-24-11-0000
Skookumchuck Creek	07-08-00-0000
Slate Creek	07-09-00-0000
Weiser River	08-00-01-0000
West Fork Weiser River	08-26-00-0000
Whitebird Creek	07-07-00-0000
Wildhorse River	05-14-00-0000

Appendix A. Waters stocked with catchable rainbow trout by McCall Hatchery (cont.)

Water	Catalog Number
Browns Pond	09-00-00-0363
Brundage Reservoir	07-00-00-0187
Corral Creek Reservoir	09-00-00-0261
Cruzen-Brown Pond	09-00-00-0330
Goose Lake	07-00-00-0189
Granite Lake	09-00-00-0380
Hazard Lake	07-00-00-0169
Herrick Reservoir	09-00-00-0251
Lower Boulder Reservoir	09-00-00-0320
Payette Lake	09-00-00-0364
Rowlands Pond	09-00-00-0328
Seven Devils Lake	07-00-00-0113
Upper Payette Lake	09-00-00-0392



Appendix B. McCall Hatchery Diagram.